



(12) EUROPEAN PATENT APPLICATION

(88) Date of publication A3:  
22.09.1999 Bulletin 1999/38

(51) Int. Cl.<sup>6</sup>: H04N 7/24, G06F 13/00,  
G06F 9/38

(43) Date of publication A2:  
10.03.1999 Bulletin 1999/10

(21) Application number: 98202166.9

(22) Date of filing: 28.02.1995

(84) Designated Contracting States:  
AT BE CH DE FR GB IE IT LI NL

(30) Priority: 24.03.1994 GB 9405914

(62) Document number(s) of the earlier application(s) in  
accordance with Art. 76 EPC:  
95301301.8 / 0 674 443

(71) Applicant:  
Discovision Associates  
Irvine, CA 92614 (US)

(72) Inventors:  
• Wise, Adrian Philip  
Frenchay, Bristol BS16 1NA (GB)

- Sotheran, Martin William  
Dursley, Gloucestershire G11 6BD (GB)
- Robbins, William Philip  
Cam, Gloucestershire GL11 5PE (GB)
- Finch, Helen Rosemary  
Wotton-under-edge, Gloucester GL12 7ND (GB)
- Boyd, Kevin James  
Bristol BS7 9DL (GB)

(74) Representative:  
Vuillermoz, Bruno et al  
Cabinet Laurent & Charras  
B.P. 32  
20, rue Louis Chirpaz  
69131 Ecully Cédex (FR)

(54) Start code detecting apparatus for video data stream

(57) A system having a plurality of processing stages, comprising a universal adaptation unit in the form of an interactive interfacing token for control and/or data functions among said processing stages, wherein said token is a CODING\_STANDARD token for conditioning said system for processing in a selected one of a plurality of picture compression/ decompression standards; one of said processing stages being a

Huffman decoder and parser; one of said control tokens being a CODING\_STANDARD control token; and upon receipt of said CODING\_STANDARD control token, said parser is reset to an address location corresponding to the location of a program for handling the picture standard identified by said CODING\_STANDARD control token.

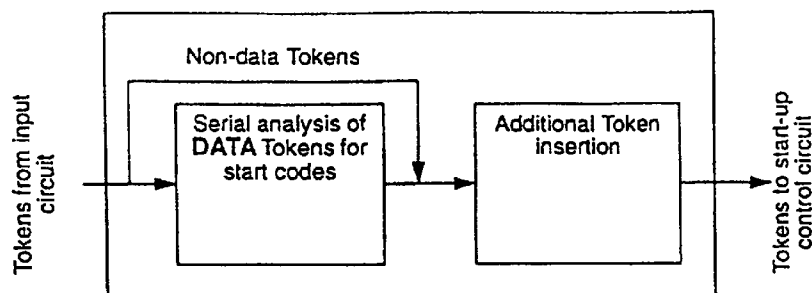


FIG.6 I



European Patent  
Office

## EUROPEAN SEARCH REPORT

Application Number  
EP 98 20 2166

| DOCUMENTS CONSIDERED TO BE RELEVANT                                                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                                                                                                                                                                              |                                              |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------|
| Category                                                                                                                                                                                                                                               | Citation of document with indication, where appropriate, of relevant passages                                                                                                                                                                                                                                                                                                                                   | Relevant to claim                                                                                                                                                                                                                                                            | CLASSIFICATION OF THE APPLICATION (Int.Cl.6) |
| P,X                                                                                                                                                                                                                                                    | WO 94 25935 A (ARRAY MICROSYSTEMS INC<br>;SAMSUNG ELECTRONICS CO LTD (KR))<br>10 November 1994 (1994-11-10)<br>* the whole document *                                                                                                                                                                                                                                                                           | 1                                                                                                                                                                                                                                                                            | H04N7/24<br>G06F13/00<br>G06F9/38            |
| Y                                                                                                                                                                                                                                                      | EP 0 506 294 A ((AMERICAN TELEPHONE AND<br>TELEGRAPH)) 30 September 1992 (1992-09-30)<br>* the whole document *                                                                                                                                                                                                                                                                                                 | 1-3                                                                                                                                                                                                                                                                          |                                              |
| Y                                                                                                                                                                                                                                                      | BURSKY D: "IMAGE-PROCESSING CHIP SET<br>HANDLES FULL-MOTION VIDEO"<br>ELECTRONIC DESIGN,<br>vol. 41, no. 9, 3 May 1993 (1993-05-03),<br>pages 117-120, XP000362680<br>* the whole document *                                                                                                                                                                                                                    | 1-3                                                                                                                                                                                                                                                                          |                                              |
| A                                                                                                                                                                                                                                                      | EP 0 576 749 A (PIONEER DIGITAL DESIGN<br>CENTRE) 5 January 1994 (1994-01-05)<br>* the whole document *                                                                                                                                                                                                                                                                                                         | 1-3                                                                                                                                                                                                                                                                          |                                              |
| A                                                                                                                                                                                                                                                      | EP 0 572 766 A (IBM)<br>8 December 1993 (1993-12-08)<br>* the whole document *                                                                                                                                                                                                                                                                                                                                  | 1-3                                                                                                                                                                                                                                                                          | TECHNICAL FIELDS<br>SEARCHED (Int.Cl.6)      |
| A                                                                                                                                                                                                                                                      | KUN-MIN YANG ET AL: "VLSI ARCHITECTURE<br>DESIGN OF A VERSATILE VARIABLE LENGTH<br>DECODING CHIP FOR REAL-TIME VIDEO CODECS"<br>PROCEEDINGS OF THE REGION 10 CONFERENCE ON<br>COMPUTER AND COMMUNICATI SYSTEMS (TENCON),<br>HONG KONG, 24 - 27 SEPT., 1990,<br>vol. 2, 24 September 1990 (1990-09-24),<br>pages 551-554, XP000235934<br>INSTITUTE OF ELECTRICAL AND ELECTRONICS<br>ENGINEERSISBN: 0-87942-556-3 | 1-3                                                                                                                                                                                                                                                                          | H04N<br>G06F                                 |
| A                                                                                                                                                                                                                                                      | GB 2 269 070 A (RICOH KK)<br>26 January 1994 (1994-01-26)<br>* the whole document *                                                                                                                                                                                                                                                                                                                             | 1-3                                                                                                                                                                                                                                                                          |                                              |
| The present search report has been drawn up for all claims                                                                                                                                                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                                                                                                                                                                              |                                              |
| Place of search<br>THE HAGUE                                                                                                                                                                                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                 | Date of completion of the search<br>30 July 1999                                                                                                                                                                                                                             | Examiner<br>Giannotti, P                     |
| CATEGORY OF CITED DOCUMENTS<br>X : particularly relevant if taken alone<br>Y : particularly relevant if combined with another document of the same category<br>A : technological background<br>O : non-written disclosure<br>P : intermediate document |                                                                                                                                                                                                                                                                                                                                                                                                                 | T : theory or principle underlying the invention<br>E : earlier patent document, but published on, or after the filing date<br>D : document cited in the application<br>L : document cited for other reasons<br>& : member of the same patent family, corresponding document |                                              |

EPO FORM 1503 03 82 (P04/C01)



European Patent  
Office

# EUROPEAN SEARCH REPORT

Application Number  
EP 98 20 2166

| DOCUMENTS CONSIDERED TO BE RELEVANT                                                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                              |                                              |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------|
| Category                                                                                                                                                                                                                                               | Citation of document with indication, where appropriate, of relevant passages                                                                                                                                                                                                                                  | Relevant to claim                                                                                                                                                                                                                                                            | CLASSIFICATION OF THE APPLICATION (Int.Cl.6) |
| A                                                                                                                                                                                                                                                      | US 5 253 053 A (CHU KE-CHIANG ET AL)<br>12 October 1993 (1993-10-12)<br>* the whole document *                                                                                                                                                                                                                 | 1-3                                                                                                                                                                                                                                                                          |                                              |
| A                                                                                                                                                                                                                                                      | MAYER A C: "THE ARCHITECTURE OF A SINGLE-CHIP PROCESSOR ARRAY FOR VIDEOCOMPRESSION"<br>PROCEEDINGS OF THE INTERNATIONAL CONFERENCE ON CONSUMER ELECTRONICS, ROSEMONT, JUNE 8 - 10, 1993, no. CONF. 12, 8 June 1993 (1993-06-08), page 294/295 XP000427624<br>INSTITUTE OF ELECTRICAL AND ELECTRONICS ENGINEERS |                                                                                                                                                                                                                                                                              |                                              |
| A                                                                                                                                                                                                                                                      | KOMORI S ET AL: "AN ELASTIC PIPELINE MECHANISM BY SELF-TIMED CIRCUITS"<br>IEEE JOURNAL OF SOLID-STATE CIRCUITS, vol. 23, no. 1, February 1988 (1988-02), pages 111-117, XP000051576                                                                                                                            |                                                                                                                                                                                                                                                                              |                                              |
| A                                                                                                                                                                                                                                                      | TOKUMICHI MURAKAMI ET AL: "A DSP ARCHITECTURAL DESIGN FOR LOW BIT-RATE MOTION VIDEO CODEC"<br>IEEE TRANSACTIONS ON CIRCUITS AND SYSTEMS, vol. 36, no. 10, 1 October 1989 (1989-10-01), pages 1267-1274, XP000085313                                                                                            |                                                                                                                                                                                                                                                                              | TECHNICAL FIELDS SEARCHED (Int.Cl.6)         |
| A                                                                                                                                                                                                                                                      | KAORU UCHIDA ET AL: "A PIPELINED DATAFLOW DATAFLOW PROCESSOR ARCHITECTURE BASED ON A VARIABLE LENGTH TOKEN CONCEPT"<br>ARCHITECTURE, UNIVERSITY PARK, AUG. 15 - 19, 1988, vol. 1, no. CONF. 17, 15 August 1988 (1988-08-15), pages 209-216, XP000079309<br>BRIGGS F A                                          |                                                                                                                                                                                                                                                                              |                                              |
| The present search report has been drawn up for all claims                                                                                                                                                                                             |                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                              |                                              |
| Place of search<br>THE HAGUE                                                                                                                                                                                                                           |                                                                                                                                                                                                                                                                                                                | Date of completion of the search<br>30 July 1999                                                                                                                                                                                                                             | Examiner<br>Giannotti, P                     |
| CATEGORY OF CITED DOCUMENTS<br>X : particularly relevant if taken alone<br>Y : particularly relevant if combined with another document of the same category<br>A : technological background<br>O : non-written disclosure<br>P : intermediate document |                                                                                                                                                                                                                                                                                                                | T : theory or principle underlying the invention<br>E : earlier patent document, but published on, or after the filing date<br>D : document cited in the application<br>L : document cited for other reasons<br>& : member of the same patent family, corresponding document |                                              |

EPO FORM 1503 03.82 (P04C01)



European Patent  
Office

# EUROPEAN SEARCH REPORT

Application Number  
EP 98 20 2166

| DOCUMENTS CONSIDERED TO BE RELEVANT                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                                                                                                                                                                |                                                         |                                              |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------|----------------------------------------------|
| Category                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Citation of document with indication, where appropriate, of relevant passages                                                                                                                                                                                                  | Relevant to claim                                       | CLASSIFICATION OF THE APPLICATION (Int.Cl.6) |
| A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | YONG M CHONG: "A DATA-FLOW ARCHITECTURE FOR DIGITAL IMAGE PROCESSING"<br>WESCON CONFERENCE RECORD,<br>1 January 1984 (1984-01-01), pages 4/6<br>1-4/6 10, XP000565437                                                                                                          |                                                         |                                              |
| A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | ELLIOTT J A ET AL: "REAL-TIME SIMULATION OF VIDEOPHONE IMAGE CODING ALGORITHMS ON RECONFIGURABLE MULTICOMPUTERS"<br>IEE PROCEEDINGS E. COMPUTERS & DIGITAL TECHNIQUES,<br>vol. 139, no. 3 PART E,<br>1 May 1992 (1992-05-01), pages 269-279,<br>XP000306411<br>ISSN: 1350-2387 |                                                         |                                              |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                                                                                                                                                                                                                |                                                         | TECHNICAL FIELDS SEARCHED (Int.Cl.6)         |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                                                                                                                                                                                                                |                                                         |                                              |
| The present search report has been drawn up for all claims                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                                                                                                                |                                                         |                                              |
| Place of search<br><b>THE HAGUE</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                                                                                                                                                                | Date of completion of the search<br><b>30 July 1999</b> | Examiner<br><b>Giannotti, P</b>              |
| <p>CATEGORY OF CITED DOCUMENTS</p> <p>X : particularly relevant if taken alone<br/>Y : particularly relevant if combined with another document of the same category<br/>A : technological background<br/>O : non-written disclosure<br/>P : intermediate document</p> <p>T : theory or principle underlying the invention<br/>E : earlier patent document, but published on, or after the filing date<br/>D : document cited in the application<br/>L : document cited for other reasons</p> <p>&amp; : member of the same patent family, corresponding document</p> |                                                                                                                                                                                                                                                                                |                                                         |                                              |

EPO FORM 1503 03/82 (P04C01)

**ANNEX TO THE EUROPEAN SEARCH REPORT  
ON EUROPEAN PATENT APPLICATION NO.**

EP 98 20 2166

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report.  
The members are as contained in the European Patent Office EDP file on  
The European Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

30-07-1999

| Patent document<br>cited in search report | Publication<br>date | Patent family<br>member(s) | Publication<br>date |
|-------------------------------------------|---------------------|----------------------------|---------------------|
| WO 9425935 A                              | 10-11-1994          | US 5699460 A               | 16-12-1997          |
|                                           |                     | AU 6775394 A               | 21-11-1994          |
|                                           |                     | EP 0710385 A               | 08-05-1997          |
| EP 506294 A                               | 30-09-1992          | US 5220325 A               | 15-06-1993          |
|                                           |                     | JP 2091442 C               | 18-09-1996          |
|                                           |                     | JP 6252775 A               | 09-09-1994          |
|                                           |                     | JP 7123229 B               | 25-12-1995          |
| EP 0576749 A                              | 05-01-1994          | CA 2099172 A               | 31-12-1993          |
|                                           |                     | DE 69229338 D              | 08-07-1999          |
|                                           |                     | JP 2834388 B               | 09-12-1998          |
|                                           |                     | JP 6348492 A               | 22-12-1994          |
|                                           |                     | US 5768561 A               | 16-06-1998          |
|                                           |                     | US 5784631 A               | 21-07-1998          |
|                                           |                     | US 5603012 A               | 11-02-1997          |
|                                           |                     | US 5907692 A               | 25-05-1999          |
|                                           |                     | US 5881301 A               | 09-03-1999          |
| EP 0572766 A                              | 08-12-1993          | US 5289577 A               | 22-02-1994          |
|                                           |                     | JP 2761449 B               | 04-06-1998          |
|                                           |                     | JP 6187434 A               | 08-07-1994          |
|                                           |                     | SG 43737 A                 | 14-11-1997          |
| GB 2269070 A                              | 26-01-1994          | US 5325092 A               | 28-06-1994          |
|                                           |                     | DE 4314741 A               | 10-02-1994          |
|                                           |                     | FR 2693607 A               | 14-01-1994          |
|                                           |                     | JP 6085689 A               | 25-03-1994          |
| US 5253053 A                              | 12-10-1993          | JP 6217277 A               | 05-08-1994          |